

# CRATF Study Report and Alignment with EPA Clean Power Plan Planning

Arizona Corporation Commission  
2016 Biennial Transmission Assessment

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# Outline

- Pre-EPA Rule Activities
- Coal Reduction Study Results, Conclusions, Recommendations & 8th BTA Decision
- Eighth BTA, Decision No. 74785 dated October 24, 2014
- Developments since October 2014
- Informational Filing and Update dated January 27, 2016
- WestConnect CPP-Related Regional Planning

# Pre-EPA Rule Activities

- **Concerns anticipating EPA Rule presented to SWAT**
  - No known regional studies to evaluate the impact of significant coal plant shutdowns
  - Agreement on need to study impact of coal plant reductions/shutdowns expected by 2019
- **Key Issues:**
  - Loss of “inertia” associated with coal plant shutdown, resulting in possible stability impact
  - Less than five years to respond
  - Change in generation pattern will impact Path Ratings
  - Problem goes beyond SWAT coal plant reduction
    - SONGS Retirement (~2000 MW)
  - California – Retirement of gas fired once through cooling plants (~8000 MW)
- **SWAT Coal Reduction Assessment Task Force (CRATF) established on February 19, 2013**
  - Created to facilitate the study process through communication with stakeholders and to help coordinate information/data exchange and to agree on assumptions

# Coal Reduction Study Results & Conclusions

- **Results**

- High coal reduction with high renewable penetration significantly increases risk of system instability

- **Conclusions**

- There is a limit to the amount of coal plants that may be shut down while maintaining reliable system operation
- The limit to the amount of coal capacity that may be reduced is influenced by gas fired replacement capacity
- The amount of renewable resources that may be integrated is dependent upon addition of gas fueled generation, or other resources that compensate for loss of inertia and dynamic reactive capability

# Coal Reduction Study Recommendations

- **Consider impacts of intra- and inter-regional power transfer**
- **Need for coordination among planning regions and with states**
- **States should consider grid reliability in their implementation plans**
- **Explore more scenarios to Identify specific transmission system needs by 2020 (e.g. reactive support, inertial resources, energy storage, dispatch patterns, etc.)**
- **Implement in coordination with the WestConnect 2016-17 Regional Planning Process**

# Coal Reduction Study - 8<sup>th</sup> BTA Decision

- **Eighth BTA, Decision No. 74785 dated October 24, 2014**
  - Directed Tucson Electric Power Company (“TEP”) to file the CRATF study report (“Study Report”) on behalf of the Arizona Utilities within 30 days of completion.
  - Determine whether the known and projected retirement of coal generation and the anticipated increase in solar photovoltaic and wind generation in the next five years may cause system stability issues.

# Developments since October 2014

- **EPA Clean Power Plan (CPP) Final Rule**
  - Supreme Court stayed implementation until all legal challenges have been resolved
  - Compliance timeline is unknown at this point
- **Opportunity to coordinate within the scope and timeline of the WestConnect Regional Study Plan**
  - CPP requirements to be considered
  - WestConnect planning with interregional coordination allow for broader geographic coverage
  - WECC TEPPC Common Case and coordination with WECC Staff

# Approximate Footprint of WestConnect Member TOs and Participating TOs





# **Informational Filing and Update of SWAT Coal Reduction Assessment Task Force – 8th BTA**

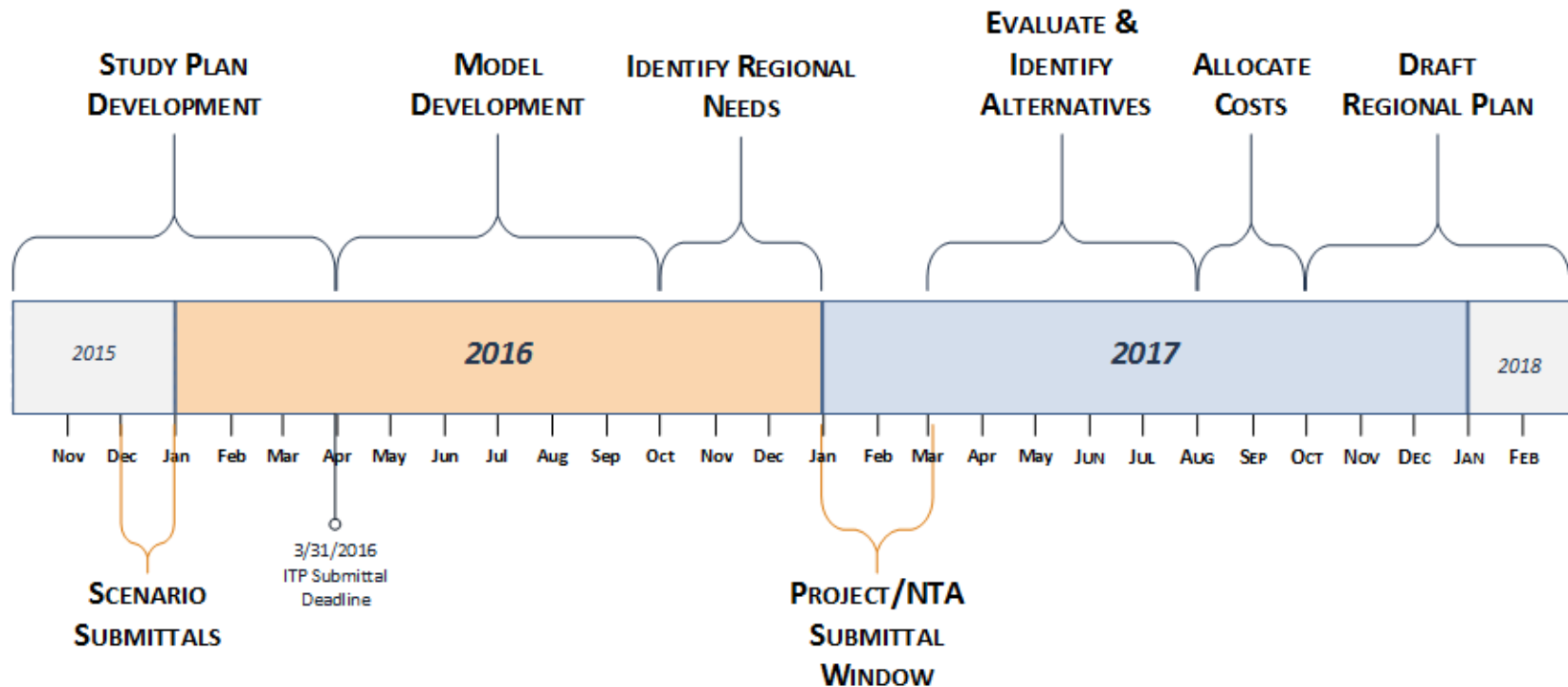
- **TEP filed January 27, 2016 on behalf of Arizona Utilities (APS, SRP & SWTC<sup>A</sup>)**
- **Recommendation to coordinate coal reduction study with WestConnect Regional Planning process**
  - CPP scenarios included in WestConnect evaluation

Note A: Name changed to AEPCO.

# Reliability Assessment Scenarios in 2016-17 Study Plan

Case Name	Case Description and Scope
2026 Heavy Summer Base Case	Summer peak load conditions during 15:00 to 17:00 MDT, with typical flows throughout the Western Interconnection – traditional case build
2026 Light Spring Base Case	Light load conditions with high wind generation – traditional case build
CPP – WestConnect Utility Plans	Reflect individual WestConnect member utility plans for CPP compliance – export stressed hour from PCM
CPP – Heavy RE/EE Build Out	Additional coal retirements, additional RE/EE, minimal new natural gas generation – export stressed hour from PCM; include transient study for frequency response check

# WestConnect 2016-17 Planning Cycle Timeline



# Arizona Coal Reduction Reliability Assessment

- **WestConnect data, base cases initial study results are expected to be available by mid-2017**
- **Arizona utilities may access credible cases and information to conduct a reliability study**
- **Propose to reconvene CRATF to outline next steps and deliverables pending WestConnect evaluation of alternatives to identify transmission needs**

# Questions ?

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